The R&E Tax Credit: Rationale, Structure, and Performance

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Economic Rationale for R&D Policy: Broad Economic and Societal Gains

- **Industry R&D generates economic growth**
- **Industry R&D can be a public good**
  - **R&D spillovers**
  - **Economic spillovers**

⇨ **Firms recoup some but not all of the benefits from their R&D investments**

Economic Rationale for R&D Policy: Market Incentives Alone are Insufficient

- **General undersupply of R&D**
- **Undersupply of R&D in specific areas**
  - **Inherently governmental missions and/or interests**
  - **Fundamental or basic research**
  - **Breakthrough, infrastructural, and multi-use technologies**

Economic Rationale for a Tax Credit: The General Undersupply of R&D

- **Purpose: get more R&D at the margin by augmenting R&D investment incentives for all firms**
- **Strategy: use tax credits to reduce the cost of capital for R&D**
  - **Credit offsets a portion of R&D costs**
  - **Lower costs raise the net present value of prospective research projects; more likely to meet corporate hurdle rate**

Credit Structure: Incremental, not Fixed

- **IRC Section 41: "Credit for *increasing* research activities"**
- **Mechanism: 20% tax credit for the portion of qualifiable R&D that exceeds base amount**
- **Key factor: The *base period***
  - **Base amount: Product of fixed base percentage and average annual receipts over last 4 years**
  - **Fixed base percentage: Average R&D intensity (qualifiable R&D over sales) during 1984-1988.**

Credit Structure: Other Major Provisions

- **Alternative Incremental Credit (1996)**
  - **Purpose: make credit available to R&D-performing firms that cannot effectively use main credit**
  - **Structure: three credit levels--1.65, 2.2, & 2.75%. Rate based on extent to which qualifiable R&D exceeds a percentage of average gross sales over prior four years--by 1.0-1.5, 1.5-2.0, or 2.0+%, respectively**
- **"Basic research credit" (41(e))**

Credit Performance: Does It Work?

- **Econometric studies: Credit stimulated $1+ in R&D for every $1 in revenue cost**
- **Applicability varies. Most effective for:**
  - **Firms with rapidly increasing R&D expenditures**
  - **Firms with current R&D intensities that are higher than the 1984-1988 period. Some factors:**
    - **Change in level of sales relative to R&D**
    - **Change in structure of the firm**
    - **Corporate tax status**

Credit Performance: Who Uses It?

- **Large manufacturing firms (>$250m) claim approximately 70% of the credit**
- **Relative magnitude: credit revenue cost equivalent to approximately 1.5% of corporate R&D funds**
- **Composition of corporate R&D (1997e):**
  - **6% basic**
  - **22% applied**
  - **72% development**

Credit Performance: Major Issues

- **Permanence: Planning v. budget scoring**
- **Base period: Old; source of bias**
- **Coverage: Cost / inclusiveness / flexibility**
  - **Rates**
    - **Effective rate of general credit**
    - **Alternative incremental credit--much of an incentive?**
  - **Definition of qualifiable R&D**
  - **Treatment of multi-organization R&D**
- **Administrative cost and efficiency**

Conclusions

- **Good reasons for spending taxpayer resources to promote corporate R&D**
- **The incremental R&E tax credit is an effective policy response to a general undersupply of private R&D**
- **But it could be improved**